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Evolution of mobility governance in Flanders.
Opening up for Bottom-up Initiatives or suffering from Lock-in?

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1 ABSTRACT

Mobility policy in Flanders lacks a clear discourse on implementing the policy objectives for 2020 and beyond. Though mobility planning can show success stories, mobility problems seem to aggravate. For supra local mobility projects in Flanders the executive power often lies with deconcentrated administrations at the level of the province, this is e.g. the case for public transportation and major roads, where province boundaries impede public transport projects across borders. For local mobility plans, the local administration and council have the power. But as these local mobility plans have highly formalised procedures, they tend to be rigid frameworks or administrations and risk to be suffering from lock-in. There is a need for new dynamics in mobility policy in reference to present developments. Here bottom-up or outside-in initiatives can be regarded as the key to real change. To that end radical changes in the organisation and mobility planning itself are necessary to meet these new inititiaves from the bottum-up and outside-in. Next to hardware and software approaches or innovations to turn mobility planning more sustainable, we additionally propose in this paper an 'orgware' solution, demonstrated in some case studies. In these cases key actors of bottom-up projects and their associations with other actors are visualised. Furthermore barriers and potentials for implementation are formulated leading onto recommendations for further research in order to improve the implementation of the policy objectives.

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1 INTRODUCTION

Mobility policy in Flanders seems to aggravate, especially in cities. Brussels and Antwerp are for instance the most congested cities in the world according to Inrix traffic scorecard (http://www.forbes.com). Since many Flemish people commute to work in Brussels everyday and because the Brussels region is strongly embedded or even situated within the Flemish road network, the Brussels mobility problem is also a Flemish one. With Antwerp as second most congested city, the Flemish mobility system is fragile. Besides congestion also noise level, and air quality are part of the mobility issues. The growing car park and travelled kilometers only raise the total exhaust emission level, and cause negative environment and health effects. Mobility policy objectives therefore incorporate operational objectives to improve access, accessibility, safety, liveability, and want to reduce the negative impact on the environment. These objectives will focus for instance on the elimination of competitive advantages for cars, by providing better alternatives. Optimized public transport services will be provided and walking and cycling will be stimulated for shorter distances, predominantly within the city. Also the hotspots of emissions will be tackled in the city.

The factual implementation of mobility objectives, however, is yet to be established. Mobility policy in Flanders lacks clear discourse on how to attain these policy objectives for 2020 and beyond. Even the approval of the most recent mobility plan by the Flemish government and advising councils has not yet been finished. We believe this absence of an unambiguous and consistent mobility planning relates to the increasing complexity characterizing the current mobility-related problems. **First**, mobility is highly interconnected to other domains, for instance economics, social and spatial structure (or land use), infrastructure and vice versa (Bertolini, 2012). Mobility at the same time also acts upon multiple governance levels as well; it ranges from local municipalities to the whole Flemish region. On the one hand, decisions and developments within these various interrelational domains exert enormous impact on mobility and mobility policy. On the other hand, infrastructural interventions also influence land use. The environment and environmental health are inextricably linked to mobility and spatial structure as well, resulting in sustainability and liveability conditions. Hence, various policy domains are involved in the field of mobility, and thus have to cooperate to achieve the policy objectives. This does uncover a number of severe internal difficulties. Different policy domains neither cooperate well nor communicate well. In fact their policy is even not always harmonized, so that some domains act contradictionary. **Secondly,** there is a growing body of various actors and upcoming initiatives involved in mobility. Some of these innovations act on the management or governance level. For instance Uber is competing with the highly formalized taxi-sectors; bike and car-sharing systems or even driverless cars challenge the management side of mobility and often cause implications for legislation. What happens in case of an accident; who is to blame? Are these systems reliable? Additionally, civic (activist) groups are rising and are challenging traditonal pathdependencies of mobility planning. Hence, to overcome problems of implementation these new extern actors have to become involved in the planning process. In addition to the focus on the technological ('software') or infrastructural ('hardware') innovations to deal with complexity , there is a need to focus additionally and even more specific on an up-to-date governance approach of mobility planning. There is a growing need for involvement in the evolving network of mobility actors, their interconnections and manner of inter-communication to improve the outcomes of infrastructure or mobility projects (Boelens, 2009; Straatemeier & Bertolini, 2008; Switzer, Bertolini, & Grin, 2013).

Here the orgware aspect is to be considered among the software and hardware aspects of the system in order to function (Dobrov, 1979; Smits, 2002). Already in 1979, although rather situated in technological sphere, Dobrov (1979) pointed out that there are numerours interactions between the hardware, software and orgware and that their role is of major importance for future (scientific/technological) progress. He argued that there are certain circumstances that require a systems (software-orgware-hardware) approach to be adopted by future-oriented policy making to accomplish technological changes. "*The growing complexity of newly created technological systems, the diversity of their forms and the intensification of their ties with other systems: this circumstance determines the character and dynamic structure of the positive and negative consequences of the functioning of technological systems*" (Dobrov, 1979, p. 80). He proposed orgware as: " *a set of organizational arrangements specially designed and integrated using human, institutional, and technical factors to support appropriate interaction of the technology and external systems*"(Dobrov, 1979). This definition can also be applied to spatial planning and mobility and is in line with our actor-network

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approach and our perspective on the evolution of governance, where different actors and their influence on others and context is revealed. Dobrov (1979) distinguishes two orgware levels: the macro orgware, consisting of a set of economic and legal regulations, and the the operational orgware (micro level) focusing on the organization-structural solutions and procedures for management. The macro level is revealed by presenting an overview of the present mobility planning policy institutions. With the more specific case analyses, we then try to expose the micro level orgware of the mobility actors.

This paper starts by presenting dominant evolutions in the field of spatial planning and mobility planning. Policy decisions and decrees with major impact will be discussed. By providing this overview, it becomes clear that planning strategies at hand lack the capacity to deal with complex cases that have consequenses for different policy fields (Bertolini, 2012). Two mobility cases will confirm this hypothesis of a growing complexity and an increasing fragility of the present planning institutions in a third chapter. The selected cases are examples of mobility planning regarding the internal and external problems of mobility. They address the importance of involvement of a range of actors and the choice for a convenient scale of the specific local mobility problems. Note that the outcomes of the planning of these projects are not necessarily good (if any at all). The first case is the MOZO study, in response to higly undesirable development of cut-through traffic within the southeastern edge of Antwerp. The second case deals with the completion of the Antwerp inner ring road through the Oosterweel link project. From these cases we will finally draw conclusions and sketch a preliminary outline for future mobility planning research, taking adaptive orgware into its most predominant focus point.

2 MOBILITY IN FLANDERS

2.1 Planning practices and discourses: a chronological overview

It is only since the late 1990's with the Spatial Structure Plan for Flanders that there was an intention to adopt a more proactive way of spatial planning. Before this Spatial Structure Plan for Flanders, spatial planning was limited to the elaboration of binding sub-regional, local and detailed zoning plans. Following a zonation principle, the map of Flanders had been coloured in different colour zones, corresponding to different destinations of authorized land use. But the plan was not able to reduce the housing sprawl that had already started before the zonation, as earlier policy decisions had been favouring suburban development. In 1997 planning adopted a more strategic way of thinking with the Spatial Structure Plan for Flanders, formulating long term visions and focussing on the involvement a broad field of actors (Albrechts, Healey, & Kunzmann, 2003). The establishment of a structure plan for the Flemish region was soon to be followed by structure plans for the provinces and municipalities. A structure plan is typically highly formalised, not only regarding the resulting document but also in terms of the planning procedure. The bottom-line of the plan was to counteract urban sprawl by initiating the concept of 'deconcentrated clustering'; meaning that the already spread out urban developments (deconcentrated) were preserved but resisted any further sprawl (clustering). Another important evolution that came along with the structure planning was the decentralisation tendency going on in Flanders as elsewhere (Lauwers & Gillis, 2010). This had also led to the shift of the actual power from the regional administrative department to the provincial branches. With regard to the portfolio of mobility, this became apparent through the categorization of the road network (Lauwers & Gillis, 2010). It is important however to make the distinction between ownership and control or management over the infrastructure on the one hand and the functional road categorization on the other hand.

There are only two owners of road infrastructure in Flanders, namely the Flemish Government and the local municipalities. The corresponding management and exploitation associated with these owners are respectively the Flemish Agency for Roads and Traffic (AWV) and the local municipalities themselves. To make it more complex, the functional categorization of the road infrastructure holds three main levels corresponding to the involved planning authorities: 1) the highways and primary roads, which mostly correspond to the roads under control of the Flemish region, of which implementation happens by the Flemish Agency for Roads and Traffic; 2) the secondary roads, which are only under planning control of the province, that depend for the implementation on the regional or the local authorities; 3) the local roads, that are under the responsibility of the municipalities. However there are also roads under the management of the

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Flemish Agency for Roads and Traffic (AWV) that have been categorized as local roads. Especially in cities, where highways or primary roads are radiating into the city and are interfering with the local road network, often fuzzy and complex situations occur. Mobility planning in these places becomes more complex regarding the planning versus implementation context.

Since the millennium break some major new evolutions came up in mobility planning. Since 2000 the Flemish regional mobility plan had been set out and was finally established in 2003. This plan was and still is the legal basis for today's administrative mobility governance, since a draft version of the new mobility plan of 2010 had been postponed due to the negative advice of the Mobility Policy Council (MORA). On the local level, a lot of municipal mobility plans have been developed since 2000. These local mobility plans (LMPs) in Flanders typically hold sustainability objectives, public involvement and agreements with higher authorities. Municipalities can obtain approval for their mobility plan from the public transport company (*vervoersmaatschappij De Lijn*) and the Agency for Roads and Traffic (*Agentschap Wegen en Verkeer*, *AWV*). This Agency holds the exploitation of the highways as well as the primary road network, expanding even within and across municipal networks. Consequently the approval of AWV should guarantee the complementarity of the local plan with respect to the higher level mobility plans. Besides municipalities can only obtain funding from higher authorities for mobility projects if first the broader vision on mobility has been clarified via these local mobility plans. Following a study carried out for the state-of-the-art of sustainable urban mobility plans in 2012, 90 per cent of the Flemish municipalities had an approved LMP at that time, which is quite a high percentage compared with other European countries (Rupprecht Consult, 2012). Figure 1 shows that most of the municipalities had an approved LMP (green colours) in 2010, were preparing an actualization of the former one (which formed still the legal basis) or were drawing a new one (pale yellow colour). Only a few municipalities didn't have an approved LMP in 2010 as is shown in red. This number has yet been reduced to seven percent of the municipalities at the moment (http://www.mobielvlaanderen.be/mobiliteitsbeleid).

Hence, Flanders' mobility governance system is considered to be amongst the most well organized in Europe (Rupprecht Consult, 2012). This resulted not only from the high percentage of approved LMPs, but also from the included government incentives, and the involvement of different actors. However, this kind of mobility planning also has its limiting aspects. First, local mobility plans are highly formalized, leaving no room for the involvement of new actors or initiatives in the planning process. Altering interest and innovative ideas of new actors in reality don't find their way into the mobility debate. At its best only the usual suspects (mostly traditional intermediary organizations) are involved in the debate. The mobility planning therefore appears to be threatened by a lock-in regarding the planning procedures and involved actors. Although much has to be expected from new actors in a context of budget cuts and the phasing out of the welfare state. Second, local mobility plans can deal only with mobility problems within the municipal territory. Nevertheless, some municipalities, predominantly in the direct vicinity of cities, often encounter cross-border mobility issues (e.g. cut-through traffic or transit traffic). For these issues an inter-municipal mobility plan is more appropriate, bundling not only the rather limited workforces, but also dealing properly with cross-border mobility issues on an intermediate level. Moreover, municipalities together can sometimes create enough critical mass to enforce new public transport trajectories from the public transport provider. An example of an inter-municipal mobility plan is discussed in the third chapter.

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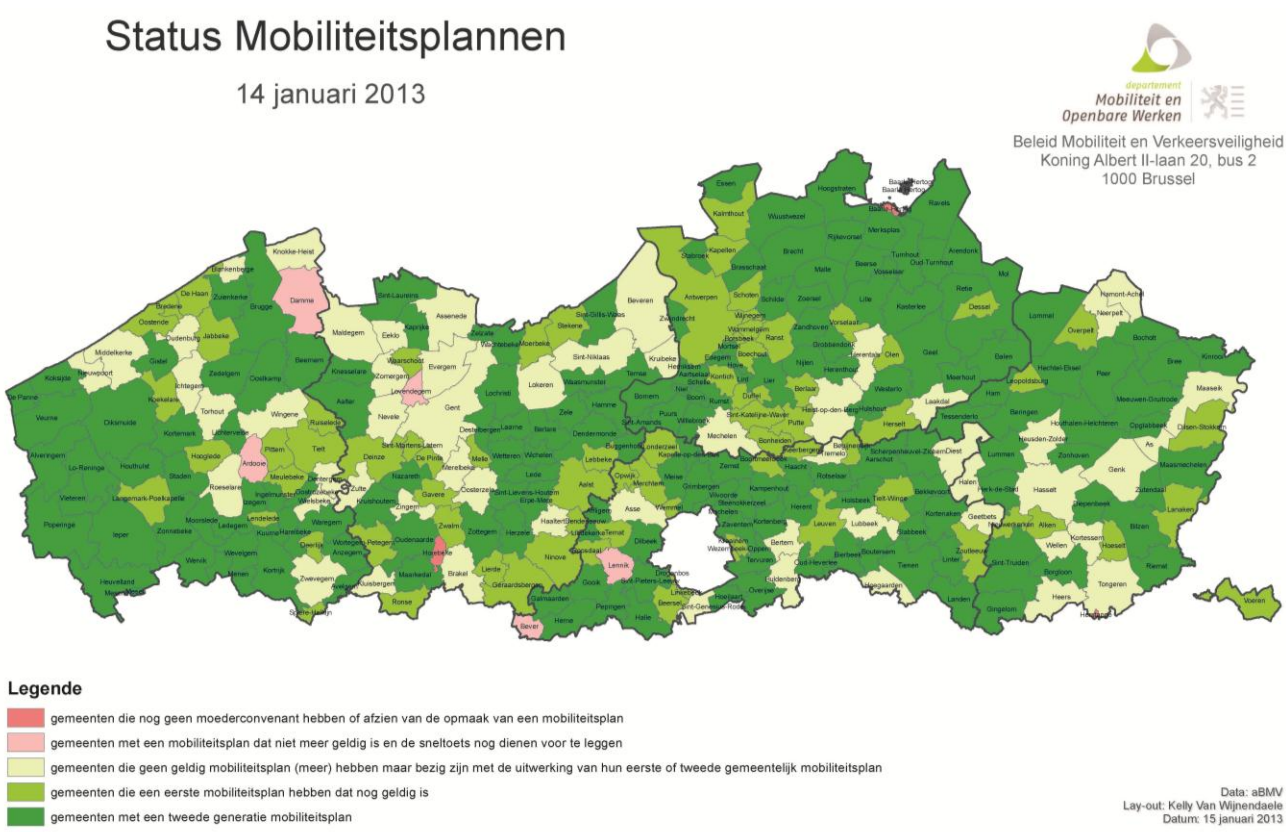

Figure 1: Status of Local Mobility Plans in 2010 (DMOW, 2010 http://www.mobielvlaanderen.be/).

During the 2000's the Flemish government has also started to prepare a more ambitious spatial plan, the 'green paper' for spatial policy in Flanders (*BRV, Beleidsplan Ruimte Vlaanderen*), to replace the spatial structure plan of 1997 (and later versions of the plan). The green paper has been approved in 2004, but the actual policy plan procedure is still ongoing. After a rather silent period, the BRV has recently officially been restarted and is expected to be finished at the end of 2016. It will cope with a much longer period, drawing Flanders' future in 2050. The BRV will also deal with sustainable and environmental issues. Economic growth will have been linked in this document to a liveable and sustainable development (RWO, 2012, pp. 12-14). Moreover for the first time an intention of integration of the policies for land use and mobility, which has not been the case with earlier spatial structure plans, nor mobility plans. The first attempt of the BRV, did not really connect to the mobility plan, rather only referred to it. Hence the MORA insisted that a more integrated vision on mobility and spatial planning was necessary (Mobiliteitsraad, 2014). Consequently the BRV was at first not approved by the Flemish parliament and stranded before the last elections in May 2014. At that time, the administrations of spatial planning and mobility planning could not show accordance. There was no shared or integrated spatial-mobility view, although this was initially foreseen in the BRV. With the official restart the integration is to be addressed, but the Flemish Mobility Plan procedure has not yet been officially restarted again…

In the domain of mobility the right on Basic Mobility[1] has been initiated in 2003, guaranteeing a minimum public transport supply in even the most sprawled urban areas. At the same time the prevailing spatial plan for Flanders proposes the concept of 'deconcentrated clustering', to resist further sprawl. Moreover the domain of Spatial Planning has been dominated by law and geographic planners, while the domain of mobility has been dominated by the civil engineers in Flanders. Both domains follow their own path dependencies and are acting apart from each other. Even more they are often opposing each other instead of

[1] The Basic Mobility decree, established in 2002 by the Flemish Government, guarantees a minimum mandatory public transport supply in residential areas. This minimum supply depends on or is proportional to the kind (and often size) of the involved residential area, distinguishing metropolitan areas, urban areas, suburban areas, smaller urban areas and rural areas. Each of these categories of urban development have clear set operational objectives for public transport regarding the distance to a transit hub, the frequency of the public services, etc. The implementation of this right on basis mobility started in 2002 and was expected to be finished in 2007. The public transport company (De Lijn) was appointed to carry out the project (http://www.mobielvlaanderen.be).

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working together, ignoring their interconnectedness. However also mobility policy itself doesn't seem to follow a clear path. On the one hand the Basic Mobility decree and the concerning expenses express the focus for a qualitative public transport supply. But on the other hand tax benefits for company cars are about equally large[2], and are even amongst the highest in the world (De Smet, 2014). Hence we could speak of a Flemish Mobility policy that lacks a clear discourse.

Furthermore a number of mandatory impact assessments and strategic advisory councils were established around 2005. These institutions and assessments have certainly prolonged the planning processes to improve quality and to minimize externalities. In 2004 for instance the 'Minaraad', the advising council for the Flemish government concerning environmental and nature associated issues, was founded. This council was then soon followed by the mandatory Environmental Impact Assessment reports (EIA, *MER, milieu effecten rapportage*) for big projects with possible important externalities for the environment. Later on in 2006 a mobility council for the Flemish government was established. Followed in 2009 by the set out of an assessment specifically for mobility impacts: the Mobility Impact Assessment (MIA, *MOBER, mobiliteits effecten rapportage*). And also the mobility test (*mobiliteitstoets*) became compulsory, a rather brief document, screening the potential mobility impact for the smaller mobility projects (http://www.mobielvlaanderen.be/). Nevertheless all these new institutions and assessments have also further formalised and extended the complexity of up-to-date and innovative space-mobile interventions.

In the next chapter the growing complexity encountered by the planning and the implementation of new mobility projects will become clear. The cases will show whether present government strategies can deal with the increasing complexity or not. From these cases opportunities and difficulties confronting the government are elaborated and finally conclusions are drawn.

3 CASE STUDIES

3.1 Selection of two cases

With two cases we want to invigorate the need for an orgware approach accomplish the transition towards a more sustainable mobility. Both cases are dealing with complex mobility and liveability problems. The two projects include various scale levels (governance levels) and therefore need an integrated approach. The first case is the MOZO-platform project resulting from the previously conducted SLUIZO-study. The controversial project of the Oosterweel link is the second case.

The chapter will deal with the two cases separately. First, the occasion and context of the projects is specified. Further, the involved actors and the project process are described. Ultimately, the project outcomes and remarks on the process are formulated. The focus hereby lies on the interconnections between the various actors resulting in networks involved in the project.

3.2 Case 1: Mobility in south-eastern edge of Antwerp (MOZO-project)

3.2.1 Occasion and objectives

The MOZO-project resulted from the increasing need to cope with mobility issues, shared by several municipalities[3] in the south-eastern edge of Antwerp, in a broader and more integrated manner. The main driver of the process was the perceived cut-through traffic, that was indicated as problematic for accessibility safety and liveability by all of the municipalities. Because local mobility plans could not solve these cross border problems and because the municipal administrations lack the appropriate time and budget to carry out inter-municipal strategic planning studies, the municipalities addressed their issues to the Flemish

[2] Data on public transport expenses for the regions retrieved from (Belgisch Staatsblad, 2014; Service Public de Wallonnie, 2014; Vlaams Parlement, 2013) data on company cars tax advantages retrieved from (De Smet, 2014)

[3] The municipalities involved in the study area are: Aartselaar, Boechout, Borsbeek, Edegem, Hove, Kontich, Lier, Ranst, Wijnegem, Wommelgem and Zandhoven

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Government. (Arckus, 2007; Leys, 2015). Besides, these municipalities are rather small, with often very little primary roads on their territory. That is another reason why the Flemish Agency for Roads and Traffic (AWV) does not or even cannot intervene, for the infrastructure agency focuses on its own responsibilities, namely the primary road network. As a consequence the municipalities saw no other solution than to address their issues at a higher planning level and the SLUIZO study (Cut-through traffic study in the south-eastern edge of Antwerp, *Sluipverkeer in de zuidoost rand van Antwerpen*) was launched. Later this study would lead to a MOZO-platform for permanent further consultation, evaluation and monitoring of the more integrated mobility problems across these municipalities (Leys, 2015). In figure 2 the road infrastructure network of the study area is shown. It is remarkable that no clear carrying (tangential) network in the area is available. Congestion on the primary road infrastructure then causes unintended transit traffic on the underlying carrying network. Consequently, the traffic passes through the municipal cores in the area, as can be seen in figure 3 and 4.

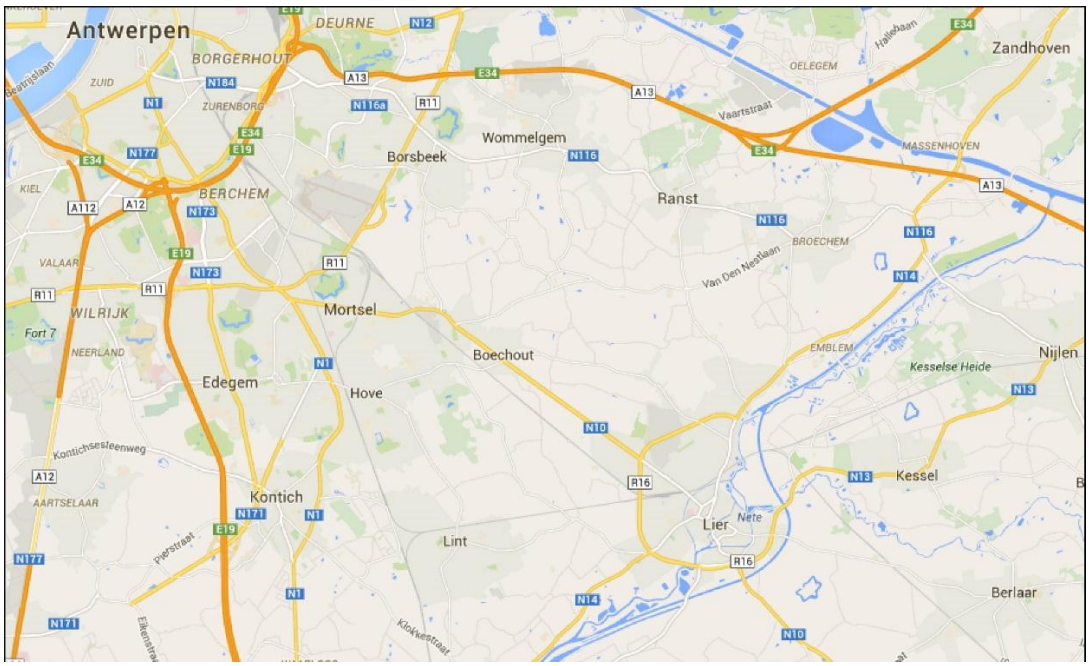

Figure 2: Situation and road infrastructure within the SLUIZO study area (Google Earth, 2015, https://www.google.be/maps/)

Figure 3: Live Traffic Info (Tomtom, 2015, http://livetraffic.tomtom.com/, 25/02/2015, 16h50)

When the municipalities first came together for the SLUIZO-study, they clearly stated that the result of the project could not be a new study, but rather a bundling of the literature and existing data on mobility for the

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area. [4] But in the end the perceived big body of mobility literature appeared to be very limited for the specific SLUIZO issue. Nevertheless, the budget for new research was restricted and not much new information could be collected. Yet SLUIZO focused on traffic flows within the area and on the public transport supply (Leys, 2015). The interactions or travel patterns within the SLUIZO-area, that were perceived as cut-through traffic, are shown in figure 3.

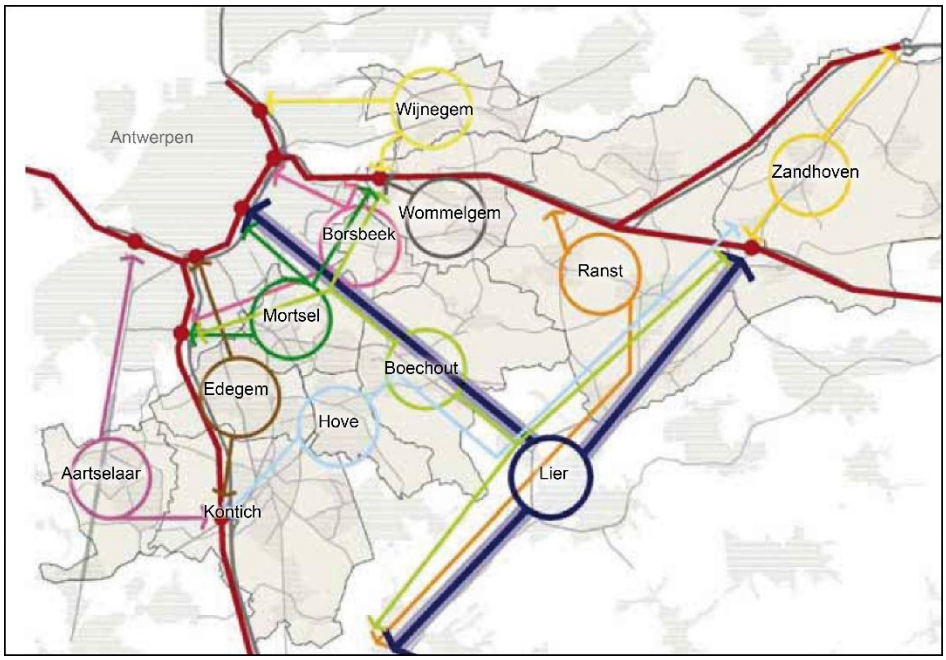

Figure 4: Internal travel patterns from municipalities within the SLUIZO area, often perceived as cut-through traffic (Figure 14, Arckus, 2007, p. 51, own adaptation)

In stating the problem definition it became apparent that the participating municipalities had different perceptions on cut-through traffic, which is also shown in figure 4. Some municipalities for instance took also the traffic from neighbouring municipalities to their own territory into account as cut-through traffic. When all these viewpoints on the perceived problem were brought together, the actual issue to tackle appeared to be the lack of a carrying (tangential) road network for in-and outgoing traffic in the study area. The congestion on the highways and the primary roads and the lack of transit flow on this primary road network was in fact the real driver of the problems in this area. And for that also the name, that initially referred to the cut-through traffic (SLUIZO study), later changed to the MOZO-project, incorporating the broader mobility picture of the area, resulting finally in the MOZO-platform (Arckus, 2007; Leys, 2015).

The SLUIZO study has led to a common definition for the cut-through traffic, a broader vision for the mobility within this Antwerp edge and action plans per work package to obtain this vision. The permanent consultation platform for managing these higher level mobility issues was also an important objective. The platform had to obtain a support base among the municipalities for the broader mobility issues. In addition the MOZO-platform was a new institution for carrying out research, for making strategic and integrated plans for the area. Third the platform was established to guarantee the quality of the local policy mobility proposals and interventions (Leys, 2015).

3.2.2 Actors & Project process

The initial incentive for the SLUIZO-study and MOZO-platform came from the bottom-up, from perceived cut-through traffic and mobility problems encountered by the municipalities Aartselaar, Boechout, Borsbeek, Edegem, Hove, Kontich, Mortsel, Ranst, Wijnegem and Wommelgem. Later in the process also the

[4] Note that such studies are in fact secondary sources. They are not conducted for the same purpose, they may carry a lot of information, however this is not direct applicable to the SLUIZO- study area. So mainly secondary sources are useful, but they are often not sufficient.

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municipality of Zandhoven became involved in the project. The Flemish Government was addressed in the search for a solution. This decision was supported by the participating municipalities (Leys, 2015).

SLUIZO-Study

The SLUIZO-study was conducted by the Arckus consultancy group, following a consultation structure at three levels or tracks. The first level was the research track existing of the Arckus team or the project leader. The second track consisted of the policy preparation and the more technical assistance and was named the project group. The third track was rather political, where the final choices for implementation were to be made. This track was called the steering group. Between the three planning tracks a lot of interaction was organized in the form of interactive workshops and consultations. Moreover it was crucial that the tracks would co-evolve towards a solution or a consensus (Arckus, 2007, pp. 17-19).

In a first phase of the study, the mobility literature on the concerning area was analysed by the research group in order to gain overview of the available research. For the problem definition of the SLUIZO-study both bottom-up (from the municipalities) and top-down (from the infrastructure agency) based definitions of cut-through traffic were taken into account. This twofold problem definition showed that not cut-through traffic was the driver of the mobility issues, instead congestion on the principal road network and the lack of a carrying secondary road network caused the real mobility problems. Both the municipalities and the Flemish Agency for Roads and Traffic then had to list the bottlenecks within their territory, resulting in a problem tree (Arckus, 2007).

In a second phase the project group came up with solutions based on their technical knowledge, leading to a solution tree. This tree was then further elaborated in four different future scenarios, mainly focussing on how and where to implement the carrying road network (e.g. where freight traffic would be allowed). These scenarios held a vision for the longer term and included operational objectives that were immediately achievable. From the four initially suggested scenarios an integrated scenario was then composed, including all the strengths of the basic four scenarios. Afterwards the operational objectives were translated into tables of measures, clustered according to the relevant policy field, see figure 5. Of the suggested measures some were then further selected as quick wins, feasible on the short term and at relatively little expense (Arckus, 2007, pp. 21-23,94,98,161). Figure 1 shows the three involved policy domains or arenas taken into account for the interventions: the spatial structure context, the transport context and the infrastructural context. However the latter was much more elaborated than the others, indicating a strong focus on the infrastructural layer and the domination of an engineering approach in mobility planning. In the end of 2007 the final version of the study was published, leaving action plans and infrastructural measure catalogues to the municipalities.

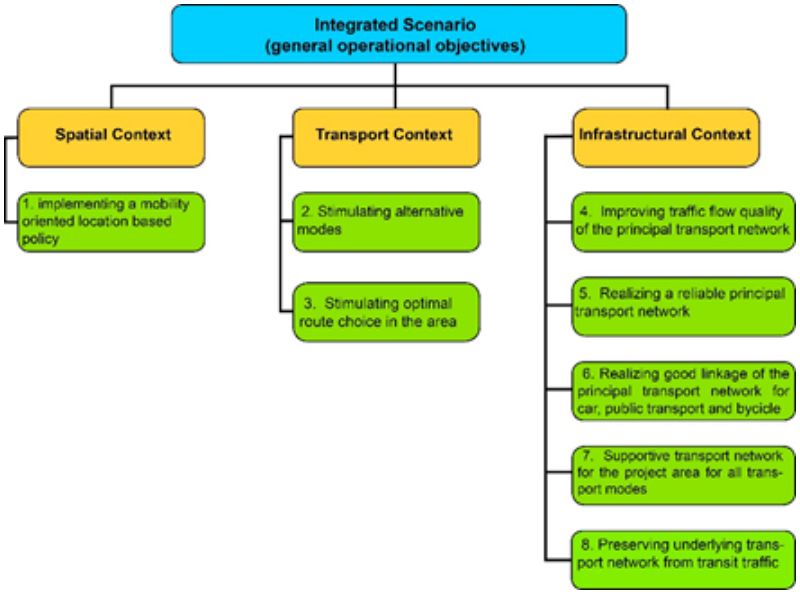

Figure 5: SLUIZO-study outcomes of an integrated scenario, suggesting measures per theme and context (Arckus, 2007, p. 7, own translation)

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MOZO-platform

The MOZO-platform was to be established in a next step, but only in the end of 2008 the platform was actually initiated. The platform had its own administration financed by the Flemish government and was initially thought of as a pilot for other inter communal problems. The responsibilities of the platform were to follow up the suggested interventions of the municipalities, and to reject the infeasible ones. Also strategic and bilateral consultations and collaborations between two or more municipalities were undertaken from this platform. Other regions with cross border mobility issues such as the region around Mechelen and the Noorderkempen were interested in such an intermediate planning level platform as well. This showed the broader need for this kind of institution (Leys, 2015). Unfortunately the results of the platform were not (yet) directly visible on the ground, however this is partly due to the quick-win focus adopted in the SLUIZO-study. For this, some municipalities and politicians lost their faith in the MOZO-platform and in the need for this platform. The operational budget was questioned: "Why would a platform with little or no feasible outcomes receive money, while there is less and less money for the municipalities' infrastructure?" (Vlaams Parlement, 2008). During the activities organized by the platform little engagement came from the public actors, namely the Flemish Agency for Roads and Traffic (AWV), the public transport company De Lijn and the municipalities themselves. At that time different ministers for the policy domain of Infrastructure and of Mobility rather worked against each other than cooperated. Moreover transparency lacked in the decision making process and a clear and open communication repeatedly failed. A lack of commitment and trust between the various partners (ministries, municipalities, infrastructure agency, public transport company) made the platform bleed to death, even before it could show its capacities (Leys, 2015).

3.2.3 Project outcomes and discussion

Only a few of the list of SLUIZO measures have been realized. With the abolishment of the MOZO-platform there is however no intermediate institution anymore to deal with the broader and more strategic mobility issues properly. Yet the demand for such an institution has remained, as local administrations are still limited in time and in budget. In addition, the critical mass needed to achieve new public transport trajectories for buses and trams calls for intercommunal collaborations too. Furthermore, the municipal budget for infrastructure has decreased the last five years. As a consequence of all this, local administrations now are typically looking for quick ad hoc solutions, focusing on their own territory (Leys, 2015).

In the literature on the orgware or governance approach for innovations several researchers mention the importance of intermediary organizations, often called 'innovation intermediaries' or 'innovation' brokers (Klerkx & Leeuwis, 2009). Following quote is especially recognizable for the MOZO case: "*These innovation intermediaries emerge in response to a perceived suboptimal degree of connectivity between relevant actors…*" (Johnson, 2008; Smits & Kuhlmann, 2004). The MOZO-platform can be seen as an innovation intermediary. It is established to deal with broader mobility issues in a strategic way, on an new and intermediary planning level. However, there are a number of tensions concerning the establishment and embedding of these innovation intermediaries (Klerkx & Leeuwis, 2009), as we have seen in the MOZO case too. The platform is silently abolished even before it has got the opportunity to show its qualities. A lack of political engagement and trust between the various administrations and government levels and between the munipalities themselves were the core problem. The MOZO platform eventually evolves into a so called 'discussion platform', due to shady communication and intransparant policy agendas. Consequently, the operational budget for this platform is publicly questioned and municipalities call for more actual and visible infrastructure interventions. The justification for public spending for innovation intermediaries is at stake, since a proper consideration or impact evalutation method of the intermediary organizations is not available (Klerkx & Leeuwis, 2009). However the municipalities themselves initially expressed the need for such an intermunicipal mobility planning platform. The MOZO-platform, initially perceived as a good and even necessary intermediate planning level, has not received a proper consideration. The effects in solving the mobility issues of the area, as expected by the the actors are not (yet) achieved, in spite of the considerable investment made on the organizational levels. This is parallel to Dobrov's findings about orgware and managerial apsects of technology in his call for an orgware approach. The difficulty of becoming embedded is here also apparent, as the different actors (municipalities, government agencies and higher authorities) have difficulty apprehending the nature and value of the intermediary's activities (confer Klerkx & Leeuwis, 2009).

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Editors: Manfred SCHRENK, Vasily V. POPOVICH, Peter ZEILE, Pietro ELISEI

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3.3 Case 2: Oosterweel Link – completing the inner ring of Antwerp

3.3.1 Occasion and objectives

Figure 6: The Lange Wapper‘ overpass as landmark for the province of Antwerp (http://www.bavo.biz)

The Oosterweel link project comprises the closing of the inner ring road of Antwerp. The idea of the completion of the inner ring structure of Antwerp was first introduced by a left bank activist group resisting the intentions for a suggested greater outer ring of Antwerp. This outer ring, already on the agenda in the 1970s, was planned to pass through the left bank development. Resisting this idea, the activists suggested a completed inner ring instead, leaving the left bank untouched. Their idea was taken up by the former governor of the Antwerp province, Camiel Paulus. He saw a huge architectural project for his province in the completion of the inner ring with an extra Scheldt tunnel crossing next to an enormous overpass over two docks and the northern edge of the city. This ‘Lange Wapper’ overpass was designed as landmark and as the crowning glory of the governor’s work and of the later Masterplan 2020 of Antwerp, see figure 6 (Lauwers, 2012).

The initial plans for the project were rather based on an architectural - engineering approach than embedded in a broader mobility vision. The fact that the complete inner ring structure was never mentioned in any planning document at the time, neither in the ongoing debate, showed the lack of being embedded in a broader mobility rationale. The problem definition was rather narrow, since it only focused on congestion (Lauwers, 2012). Environmental health, liveability and sustainability issues were not yet adopted in the programme, which would change later when the project had become controversial and had got an increasing resistance since the years 2008-2012.

After several revisions, as we shall see in the next paragraph, the plan has been adapted to the changing context of environment, sustainability and liveability issues. The most recent Oosterweel link plan is more embedded in a mobility framework, than it was at first. The problem definition now also covers the creating of green space, the optimizing of liveability and the increasing of accessibility of city and port (Lauwers, 2012; Rosquin, 2010).

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Editors: Manfred SCHRENK, Vasily V. POPOVICH, Peter ZEILE, Pietro ELISEI

3.3.2 Actors & Project process

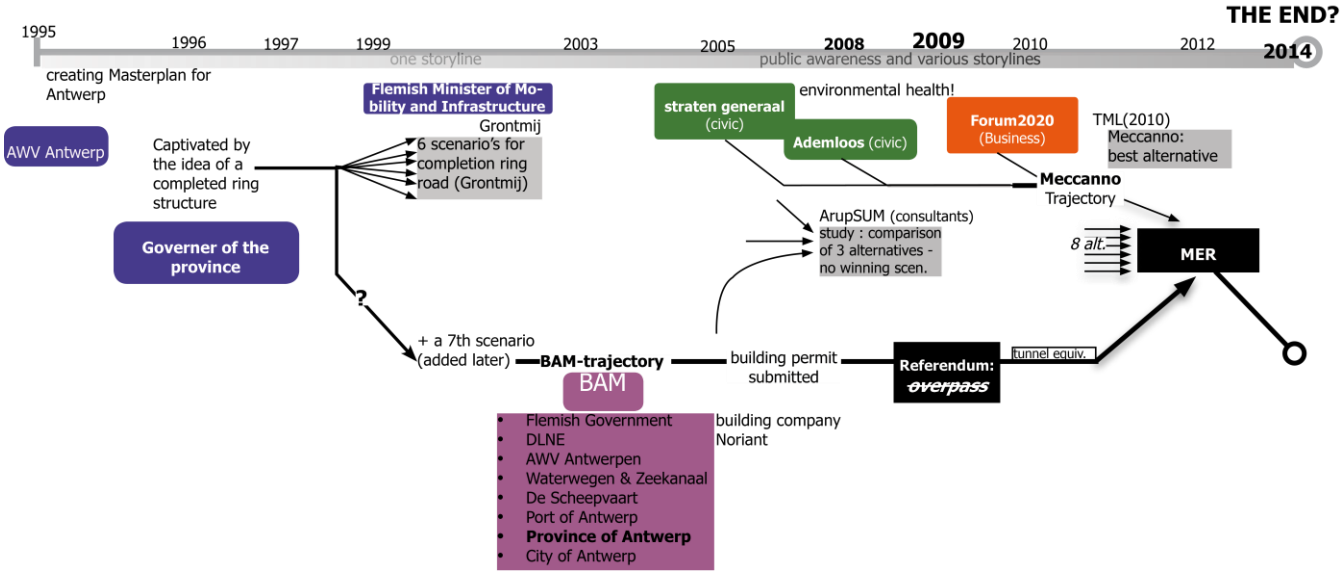

Figure 7: Oosterweel link planning process from 1995 till 2014 (Own elaboration)

Here an overview of the key points in the Oosterweel link history is given, see also figure 7.The Oosterweel link, providing for a complete inner ring road around Antwerp, started as a seamless project of architectural nature. In 1995 the Flemish Agency for Roads and Traffic (AWV, *Agentschap Wegen en Verkeer*) was to develop a Master plan for Antwerp. The governor of the Antwerp province was captivated by the idea of a completed inner ring structure to deal with the congested traffic around Antwerp. An extra Scheldt crossing through an overpass design (see figure 6) would provide the solution to the traffic malaise. The Antwerp master plan took shape during the following years. New roads, tram projects, cycling lanes and the Oosterweel link were measures taken up in the plan**.** In 1999 the Flemish Minister of Infrastructure and Mobility, Steve Stevaert, launched a feasibility study for closing the inner ring, which would be executed by Grontmij consultancy. In the study Grontmij initially came up with 6 different trajectories for the closing of the ring, but in extremis a seventh trajectory was included: later known as the BAM- trajectory. This trajectory was retained, however no clear reason for the choice of this trajectory was publicly known. The trajectory was an optimized medium trajectory of an already suggested one. The BAM-trajectory consisted of a tunnel underneath the river Scheldt that would come to the surface in the former municipality Oosterweel and would turn into a double deck overpass from there to the connection with the R1 (existing part of the ring) in Merksem (Rosquin, 2010). In 2000 the city of Antwerp, the Antwerp Province, the Flemish government, the port of Antwerp and the public transport company supported the plan under the guidance of the governor. In 2001 a temporal research group was established, named TV SAM, in order to prepare the projects for the master plan. When the study work was finished, TV SAM (temporary joint research group Antwerp Mobile, '*tijdelijke vereniging-studiegroep Antwerpen mobiel*') was replaced by BAM in 2003, (Management Company Antwerp Mobile, '*Beheersmaatschappij Antwerpen Mobiel*', where the focus was on the management function. In the years that followed the implementation of the BAM-trajectory was made legally possible. In 2005 the environmental impact assessment (EIA) of the plan had been approved by the Flemish government. The regional spatial implementation plan was finalized as well during the end of 2005.

Since the second half of 2005 opposition had grown. Antwerp citizens did not accept the government's choice for the BAM-trajectory and went into resistance. From this time on the Oosterweel link project became controversial and resistance was increasing. The activist group 'stRaten-generaal' came up with an alternative trajectory, which provided for a longer tunnel under the river Scheldt and in which the city that was situated further north than the BAM proposed. They abolished the idea of the double deck overpass as was mentioned by the BAM. In spite of this increased resistance and the proposed alternatives, the BAM decided to continue their project and made a deal with Noriant, for the implementation of the project (Rosquin, 2010).

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By 2008, much more critical voices came into the debate. The price and financing of the project was questioned, even more because of the financial crisis in Europe. When in 2008 a new activist group 'Ademloos' (i.e. 'breathless') interfered into the debate, focusing on the health impact of the project, the Flemish government requested a new study of the alternatives, conducted by Arup-SUM. This study had to take into account the alternatives suggested by among others stRaten-generaal and the BAM. Only, there was no alternative that excelled for all measured parameters. The Flemish government then chose again for the BAM-trajectory, though it became clear that extra research had to be carried out. In 2009 a referendum was held for the Antwerp citizens. The implementation of the Oosterweel link was to be clarified. In the referendum the Antwerp citizens had to choose either for the tunnel or for the overpass variant, in the end the tunnel that was voted for. The trajectory itself was not at stake. Meanwhile the BAM had already submitted a building permit. But by 2010 another activist group, consisting of business sector actors in Antwerp, called the 'forum for mobility Antwerp 2020', had launched a new trajectory proposal, which they worked out together with the other opposition groups, Ademloos and stRaten-generaal. Their 'Meccano' trajectory redirected the transit traffic before reaching the inner part of the ring, via two extra connections or 'braces' (Rosquin, 2010).

In 2010 the final decision in the Oosterweel link debate was promised by the Flemish government, suggesting an overall solution. The problem definition and objectives had to be broadened. A multimodality viewpoint was adopted instead of interventions solely focussing on the infrastructural road traffic layer. Hereafter, the Masterplan 2020 was approved, which held the actualized version of the former master plan for Antwerp. Though a study carried out by TML (Transport & Mobility Leuven) showed that the Meccano trajectory was preferable to the BAM-trajectory, the tunnel version of the Oosterweel link following the BAM trajectory was incorporated in the master plan, together with some other infrastructural interventions in the southern part of Antwerp. In 2012 a new EIA was conducted both to assess the different alternatives and their impacts on health and environment once again and to get an idea of the best possible alternatives. This EIA had been conducted by Antea group. There were numerous alternatives proposed eight of which were selected and incorporated in the EIA. These could then still vary in different exploitation methods (e.g. toll tunnel, fright traffic ban). In 2014 the EIA had been finished on the basis of which the government finally - and without much explanation - chose for the Oosterweel link by the BAM-trajectory (J.V.A., 2014; Rosquin, 2010).

Resistance however got a new breakthrough since a collective of spatial planners and architects started the Ringland initiative. Ringland came up with the idea of an overall underground ring, giving more green space to the citizens and reducing noise and emission impact at the city surface. This idea referred to the partly underground M30 ring road in Madrid, that had already been realized in the period of 2004 – 2007. In some three months' time, by the end of January 2015, Ringland had collected more than 100 000 euro, by symbolically selling the potential land on the surface of the ring (4m² for €20). This crowd funding money was destined for a mobility study, a cost benefit study and a liveability study (E.D.M., 2015).

3.3.3 Project outcomes and discussion

Now that the trajectory is finally decided, the mode of implementation of the plan is another question. End January 2015 a new regional spatial implementation plan (RSIP) for the Oosterweel link (following the BAM-trajectory) has been approved. In this RSIP the government leaves the possibility of the underground ring road, but opposition groups strongly disagree (BELGA, 2015). Further steps that have to be tackled are the preparation of a new EIA for the project and the submission of a new building permit (Vergauwen, 2015). Nonetheless the first preparatory construction works have already started begin 2015. And at the end of 2016 the actual Oosterweel link construction will have been initiated (http://hoevlothet.nu).

In short, in the beginning of the 1990s till the first half of the 2000s the planning process follows a seamless path. In contrast since 2005 the opposition has grown, certainly after 2008, when the leading actor, the former governor of Antwerp, retires. Different alternatives and various actors have become involved since. The government is losing grip on the situation, as also shown by the revision of the EIA and the various requested studies. The opposition becomes more and more well organized, they collect knowledge independently and they easily find each other through social media. The number of actors has only increased over time, as can be seen in figure 7. This case further shows a lack of transparency in the decision making

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process and agenda setting, rather decisions are technocratic shielded and have not been taking into account the concerns of the citizen groups and local (Lauwers, 2012). Instead of an internally situated problem as seen in the first case, here the actual problems are rather externally caused. A continuous change of involved actors predominantly outside the decision making group have had influence on the implementation mode of the project, but also postponed the project construction several times, through legal actions focussing on health and environmental impacts of the project. Though, the congestion problem was at first not seen as a mobility issue, let alone an environmental or health issue, thanks to opposition groups the debate gained depth in these fields. As a consequence the activist groups, often perceived as negatively for the project process by the decision group, have had a major impact on the debate. The focus turned from an architectural landmark to a project where health and environment are considered.

4 CONCLUSIONS AND PROSPECTS

Present mobility governance policies and strategies are not sufficient to deal with the more complex mobility problems. The two selected cases experienced a growing complexity of different actors and agendas with objectives that were not always transparant or well communicated. Following Rupprecht Consult (2012), Flanders' local mobility planning occurs to be among the best in Europe, however the praised participative process is not well suited to broader (cross-level, cross-border) mobility issues or projects as we've seen in the cases. None of the cases had much of an outcome, let alone a good one.

In the first case, the MOZO-platform was silently abolished even before it had got the opportunity to show its qualities. The problem with the MOZO-platform was rather internally caused. There was a lack of political engagement and trust between the various administrations and government levels and between the munipalities themselves. The MOZO platform evolved eventually into a kind of 'discussion platform', as one participant called it, due to shady communication and intransparant policy agendas. The operational budget for this platform was therefore publicly questioned. Municipalities called for more real infrastructure interventions. However the municipalities themselves initially expressed the need for such an intermunicipal mobility planning platform.

The second case, the Oosterweel link, was an already longlasting project that started off seamlessly but got an increasing resistance over time. The project took off as an architectural land mark infrastructure project that would solve the congestion and regular traffic jams on the Antwerp ring road, by completing the inner ring through an overpass construction. The governor of the Antwerp province took the lead and guided the project through the first then years without much resistance. Nevertheless, after his retirement in 2008, no specific actor replaced him and in the meantime opposition to the plan had grown. Opposition groups came up with new alternatives to the proposed Oosterweel link and carried out their own studies. The congestion problem was at first not seen as a mobility issue, let alone an environmental or health issue, but along with the opposition groups, the debate gained depth in these fields. Nevertheless, the government retained the Oosterweel link project, however the decision making was rather technocraticly shielded and still not taking into account the demands of the involved actors. Though the debate is not finished yet. Ringland activists collected in the end of 2014 more than 100.000 euro from crowd funding, in order to execute additional research. The opposition against the project became more and more well-organized and is came up with their own studies to confront the government. Leaving these external actors out of the debate for so long has only worsened the trust in the government strategies and has delayed the project progress, while these actors could have contributed a lot to the debate.

Both case studies show that a reorganization of traditional planning institutions and networks is needed to overcome both internal and external problems for implementation. From these cases we can answer our central research question: mobility planning suffers from a lock-in situation and leaves no room for external actors to come into the debate. In order to make the turn towards a more sustainable mobility and to come up with succesfull mobility plans it is necessary to include the needs and demands of all actors involved with mobility from the beginning. Moreover, next to this increasing opposition and internal complextity of multilevel/multidimensional governance, new intiatives and actors pop up (partly induced by the telecom sector) and are challenging traditional mobility planning to its very core. Uber is competing with the highly formalized taxi-sectors; bike and car sharing systems or even driverless cars challenge the management side

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of mobility and cause often implications for legislation. As a result long term, strategic planning seems to have had its days; or at least needs to be flanked by a more or less situational, non-linear mobility planning in order to deal with these fragmentated, fuzzy inititiaves. The scale of the planning has to be adapted to the need of the specific mobility issues. A priori planned long term mobility futures are more and more missing the mark; rather a series of tactics should be adopted to facilitate the demands of actors.

In order to reach the operational mobility objectives a substantive mobility turn has to be launched. Rigid institutional frameworks don't fit anymore. Real dynamics are to come from the outside-in and from the bottom-up, resulting in a well suited adaption of the organization of mobility with respect to the demands. New upcoming innovations and actors in the field of mobility will only increase complexity in the future. Therefore perspectives demand a change from a focus on hardware (and/or even software) solutions, towards 'orgware' solutions. Up till now mobility policy has mainly been focussing on interventions in the infrastructural networks, on change in mobility behaviour or on the technological level (e.g. emission reduction). Next to these, we want to address in this paper the need for a more appropriate perspective on mobility governance to deal with environmental and health challenges. Therefore we suggest an actor-network approach within different arenas of mobility, where actors, organizations and institutions coact. We would like to call this additional approach an orgware approach, existing next to a software (technology, knowhow) or a hardware approach (infrastructure). The orgware approach has to come up with solutions for the governance of complex actor-networks in the (direct and indirect) field of mobility.

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